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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 10/528,961

Confirm No. : 9075

Applicants : Katsura HIRAI et al.

Filed : March 22, 2005

For : ELECTRICAL CIRCUIT...

Art Unit : 2892

Examiner : Elias Ullah

Docket No. : 05170/HG

Customer No.: 01933

PRE-APPEAL BRIEF CONFERENCE REQUEST

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

S I R :

Review and withdrawal of the Rejection in the above-identified application is respectfully requested. No amendments are being filed with this request, and this request is being timely filed with a Notice of Appeal. The review is requested for the reasons set forth on the following five pages of explanation.

Filed herewith: Notice of Appeal

Claims 29-30, 36-37, 43-44, 48-50 and 76 are rejected as being anticipated by Kawamura et al. There are also a number of obviousness rejections, which depend primarily on the Examiner's interpretation of Kawamura et al.

An anticipation rejection requires that each feature of the claims be found in Kawamura et al. Obviousness rejections require patentably significant differences. Except for claim 76, each claim depends directly or indirectly from claim 29.

(A) Kawamura et al. teach a method of forming a conductive pattern which includes (i) forming a pattern having a hydrophilic property or a hydrophobic property on a substrate to form an acceptor pattern, and (ii) introducing a conductive material having an affinity to the acceptor pattern, whereby a conductive pattern is formed (for example, see Claims 9 to 13 of Kawamura et al.). Therefore, the conductive pattern of Kawamura et al. is formed by using the affinity of the conductive material to a hydrophilic pattern or a hydrophobic pattern (e.g. see ABSTRACT).

In contrast, the inventive method of claim 29 requires the process of imagewise providing a conductive material on a porous receptive layer to form at least a part of an electrical circuit by impregnating the conductive material in the porous receptive layer. Accordingly, the method of claim 29, (conductive pattern formed by imagewise impregnating a conductive material in a receptive layer employing the porous nature of the receptive layer) is definitely different from the method of forming a

conductive pattern of Kawamura et al. (conductive pattern formed by employing the affinity of a conductive material to an acceptor pattern having a hydrophilic nature or a hydrophobic nature (Kawamura ABSTRACT)).

Thus, the technical concept of the method of forming a conductive pattern (an electrical circuit) of the present Application is different and non-analogous to the method of forming a conductive pattern of Kawamura et al. Therefore, Kawamura et al. do not show or suggest the present invention of claim 29. Also, because it uses a non-analogous method to form the conductive pattern, Kawamura et al. is not proper prior art.

(B) Concerning the rejection of claim 29 in page 2, lines 1 to 3 of the Advisory Action, the Examiner states that Kawamura clearly shows a hydrophilic region, i.e., respective layer contains metallic salt (see paragraph [0247] of Kawamura).

A receptive layer of the present invention is a layer which is made so as to easily receive a conductive material. Accordingly, the present invention requires the receptive layer to be porous when the receptive layer receives a conductive material. In claim 29 (last three lines) of the present application, the porous receptive layer is formed by incorporating inorganic particles. Namely, the receptive layer must contain inorganic particles before it receives a conductive material. Claim 29 requires that the present invention impregnate a conductive polymer solution in a solvent or a conductive

polymer dispersed liquid in a dispersant in the receptive layer, which contains inorganic particles beforehand to make the receptive layer porous (see the last two lines of claim 29).

On the other hand, Paragraph [0247] of Kawamura et al. teaches that "when a hydrophilic compound which forms a hydrophilic region has a high affinity to a metallic salt like polyvinylpyrrolidone, the hydrophilic region is impregnated with metallic salt or a solution containing a metallic salt".

Namely, the hydrophilic region of Kawamura et al. contains a metallic salt after the hydrophilic region is impregnated with a metallic salt or a solution containing a metallic salt. Accordingly, the hydrophilic region of Kawamura et al. itself does not contain a metallic salt, namely, it does not contain inorganic particles.

A "receptive layer" (a "hydrophilic region" in the case of Kawamura et al.) means a layer which has a role or a function to receive a conductive material. After the receptive layer is impregnated with a conductive material, it should be called a "conductive pattern" (although, a further treatment such as reduction of a metallic salt to a metal may be necessary to obtain a conductive pattern) instead of a "receptive layer". In the above discussion, the Examiner is discussing the feature of a "conductive pattern". What is described in claim 29 of the present invention is the nature of a "receptive layer" before being impregnated with a conductive material. This is a method

claim and the state of the final product is not controlling.

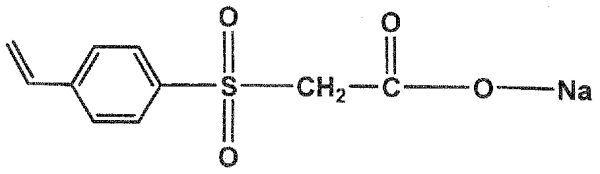
(C) On page 2, lines 5 to 8 of the Advisory Action, the Examiner states as follows: "The polyvinylpyrrolidone itself may not be "inherently" porous, however, polyvinylpyrrolidone is porous, since the hydrophilic surface comprises polyvinylpyrrolidone, i.e., respective layer is impregnating by conductive (see paragraphs [0024 and 0247-0248]) polymer and the present of conductive polymer in the polyvinylpyrrolidone will convent the hydrophilic surface comprises polyvinylpyrrolidone to porous."

The Examiner recognizes that the polyvinylpyrrolidone itself may not be "inherently porous" or porous as a matter of certainty. Hendricks, relied on by the Examiner to show a porous property, obtains porous polyvinylpyrrolidone only with a special process (see the detailed discussion on page 4, lines 11 to page 6 of the Amendment filed August 6, 2010) as abovementioned.

In the same discussion as above Item (B), there is no disclosure in Kawamura et al. that the hydrophilic surface comprising polyvinylpyrrolidone is porous before the hydrophilic surface is impregnated with a conductive polymer. Nor is a process for making polyvinylpyrrolidone porous shown or suggested.

(D) Claim 76 (independent claim): The Examiner states, on page 2, lines 9 to 10 of the Advisory Action, as follows: "However, Kawamura shows a polymer film comprises a (styrene-4-sulfonyl)sodium acetate salt wherein the sodium acetate is

inorganic material." (Styrene-4-sulfonyl)sodium acetate may be expressed by the following chemical structure:



As shown by the above chemical structure, (styrene-4-sulfonyl)sodium acetate is an organic acid salt. Thus, this does not show or suggest an inorganic material.

Further, in Kawamura et al., (styrene-4-sulfonyl) sodium acetate is subjected to a graft polymerization ([0262] of Kawamura et al.). Accordingly, the "sulfonyl sodium acetate portion" is a pendant attached to each repeating unit of the poly(styrene-4-sulfonyl) sodium acetate polymer, and therefore the "sulfonyl sodium acetate portion" can never be aggregated to form particles.

(E) There are a number of obviousness rejections relying primarily on Kawamura et al., but none of the secondary art combined with Kawamura provides the teaching of a porous layer. This is detailed in the Amendment filed March 9, 2010 at page 9, line 19 to page 12, line 2, with reference to specific teaching.

Respectfully submitted,

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